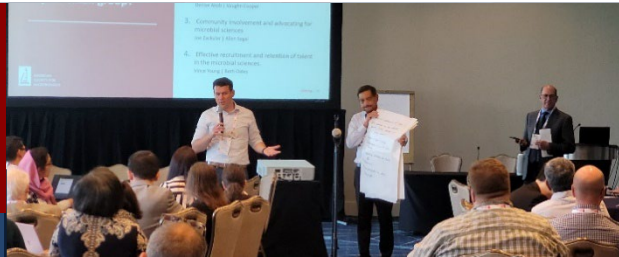




*Note from the
COMS Chair –
Vince Young*

It has been my honor to serve as COMS Chair for the past year. I think COMS will continue to evolve into an assembly of ASM thought leaders and help steer the entire Society into the coming years. In the past year, I have worked with ASM staff and COMS members to create an organizational structure to facilitate the work that COMS does in recognizing future opportunities and threats in microbiology. I am proud of the fact that we had two outstanding Community Retreats (HMB & EEB) demonstrating how COMS can drive microbiology forward.

I am most grateful to my Co-Chair over the past year, Denise Akob. As a friend and colleague, she provided invaluable support and guidance as we worked together to solidify the structure and function of COMS. As Denise takes the reins as COMS Chair, I know that she will accelerate along the path we have been on this past year. Special thanks to Beth Oates. Having her join as an ASM staff member dedicated to COMS greatly facilitated the work that Denise and I did. Finally, I am thankful to have had the chance to serve the members of COMS and the ASM community at large. As I start my term as one of the COMS-elected members of the ASM Board of Directors, I am excited to stay in contact with COMS and work together to help ASM push the boundaries of microbiology to the benefit of all humanity.



Joe Zackular & Thirumalai Kannan present on breakout group discussions at all COMS meeting in Houston, TX

Highlights of the Year

- Overview of COMS [P.1](#)
- Goals & Accomplishments [P.2](#)
- EEB Retreat Highlights [P.3](#)
- HMB Retreat Highlights [P.4](#)
- COMS in Houston, TX [P.5](#)

Solidifying the COMS Mission and Vision

As the “creative mind” of the Society, COMS supports ASM activities to advance the microbial sciences today and identifies developing scientific trends that will shape the future of microbiology. COMS identifies key topics and areas of growth for each scientific Community and advises the Board of Directors on opportunities. COMS represents the entire Society, thus prioritizing the interests and ideas of all ASM members.

Events Held Last Year & This Year

- **Quarterly All COMS Meetings**
 - December 7th** – Overview of COMS and the Community retreat cycle held virtually.
 - March 15th** – Insight into the EEB and HMB retreat planning process. Overview of planned COMS events at ASM Microbe '23 in Houston, TX.
 - June 14th** – Presentations on COMS accomplishments & vision, EEB & HMB Retreats, ASM Strategic Plan, Future Leaders Mentoring Program, and ASM’s workforce report. Breakout sessions on topics common to all of the COMS Communities.
- **Community Leader Meetings**

Monthly meetings aimed to strengthen communication and transparency with COMS leadership.
- **Community Retreats**

Successful retreats for Ecology, Evolution & Biodiversity (EEB) and Host-Microbe Biology (HMB)
Kick off for Antimicrobial Agents & Resistance (AAR) and Molecular Biology & Physiology (MBP)
- **COMS Activities at ASM Microbe '23 - Houston, TX**
 - ASM Studio presentations**
 - HMB:** “Weaving the Interdisciplinary Web of Host-Microbe Biology”
 - EEB:** “There and Back Again: The Origins and Evolution of the Environmental Microbiology Field”
 - Meet the Expert** – “The Future of AES: Where are We Going and How Can COMS Help?”
 - Chairs presented** to Young Ambassadors, Branch Officers Forum, & ASM Microbe Orientation
 - Community Leaders and ASM Microbe '23/'24 Planning Committee meeting**
 - Community Meetups** – Led by the Community Leaders at the Track Hubs

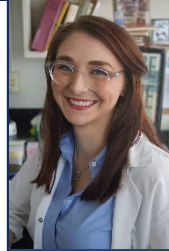
Council on Microbial Sciences (COMS)



Denise Akob & Vincent Young after all COMS meeting in Houston, TX

Chair and Vice-Chair Goals for 2022-2023 COMS Year

- Improve the operation of COMS leadership.
- Increase transparency and communication within COMS.
- Document COMS activities.
- Increase interdisciplinary microbial science.
- Support diversity, equity, and inclusion.
- Facilitate Community engagement and retreats.
- Enhance retreat outcomes.



Full Time COMS

Dr. Beth Oates officially joined the ASM staff in 2022 as

Senior Specialist for COMS. She earned her Ph.D. in microbiology, immunology and molecular genetics from the University of Kentucky (UK), College of Medicine, in 2021, her area of study being bacterial interactions, specifically *Burkholderia* contact-dependent growth inhibition systems.

A self-professed “ASM fangirl,” Beth has been active in several roles, including as an ASM Young Ambassador and President of the ASM student chapter at UK. She has been active in policy and advocacy through ASM, the National Association of Graduate-Professional Students, and a fellowship with the Federation of American Societies for Experimental Biology (FASEB).

Beth will be primary liaison between COMS and other ASM areas. One of her responsibilities involves organizing the COMS retreat cycle. Feel free to reach out to her at boates@asmusa.org or (202) 942-9304.

COMS '22-'23 Accomplishments

Accomplishments over the past year

- Documented COMS accomplishments
- Returned to the 4-year retreat cycle – successful EEB and HMB virtual retreats in Spring 2023.
- Focused on the scientific needs of the community over the next 3 - 5 years.
- External communications.
 - Informational COMS slides developed for Branches.
 - Connect with Membership.
 - At-large members invited to participate in Community retreats.
 - Microbe '23 Community Meetups.
 - Informational COMS postcards.
 - EEB & HMB ASM Studio sessions at Microbe '23.
- Participated in the Branch Officers Forum & Young Ambassadors of Science Retreat.

Structural/operational accomplishments

- Solidified the Chair-Vice Chair roles, Vice Chair included in monthly leadership meetings.
- Establish partnership and unified goals between COMS leadership and ASM.
- COMS roster on the website.
- Established the COMS Microsoft Team.
- ASM hired Dr. Beth Oates – allowed for continuity and implementation.
- Regular COMS meetings. e.g., Quarterly all-COMS and monthly Community Leader Meetings.
 - Increased communication & transparency.
 - Knowledge sharing across Communities.
 - Built momentum.

What is Next for COMS...

- Identify common themes, needs, and action items to put forward to ASM.
- Collaborate and champion the overlapping priorities identified during the HMB and EEB Community retreats.
 - Cross-Community meetings, e.g., HMB and EEB.
 - Engage across Communities.
- AAR and MPB Community Retreats.
- Engage with members to get input on priorities and recommendations.
 - Identify how to effectively engage with members, e.g., ASM Young Ambassadors, Branches, and members-at-large.
 - Continue to include diverse participation in Community Retreats.
- Work with Programming Committees to develop cross-cutting events.
 - Collaborate and support ASM Microbe 2024 Planning Committee with sessions and events for next year in Atlanta, GA.
 - Engage with ASM ongoing projects and taskforces.
- Work with Journals to promote discussions and scientific trends identified by COMS.



Attendees at the all-COMS meeting

Council on Microbial Sciences (COMS)

Ecology, Evolution, and Biodiversity (EEB) Community Retreat

Vision and Purpose

- Define the frontiers of EEB that will have the greatest impact on microbiology and society.
- Foster deeper engagement within the ASM-EEB Community and across other ASM Communities.
- Identify opportunities for ASM-EEB to synergistically interact and coordinate with other professional societies and engage effectively with the broader EEB microbial science community.

	Day 1 April 11 th	Day 2 April 12 th
Topic	Microbial Evolution and Ecology in the Anthropocene	The Ecology and Evolution of Polymicrobial Interactions
Keynote Speakers	Elena Litchman Stanford University Rachel Whitaker University of Illinois	Jessica Metcalf Princeton University Katrine Whiteson University of California, Irvine

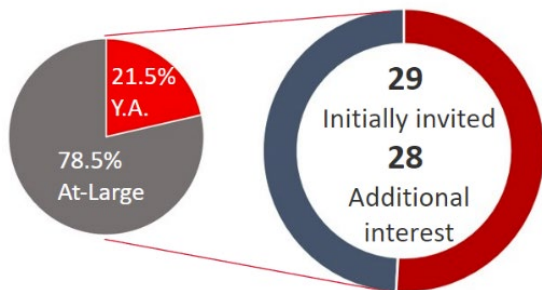


Pete Girguis & Beth Oates speaking about the EEB Retreat at the ASM Studio during Microbe 2023 in Houston, TX

Who Participated?

Total of 46 participants invited.

- 4.5% Independent Organizations
- 6.5% Medical Institutions
- 9% US Government
- 28% International
- 52% Academic Institutions



The EEB planning committee initially invited 29 individuals, then opened application to EEB at-large members & ASM Young Ambassadors. There were an additional 28 applicants, 17 of whom were invited.

Participation Interactions

- **ZOOM Chat feature** – real-time written questions & comments.
- **Speak up/raise your digital hand** – real-time spoken questions & comments.
- **Google doc** – asynchronous comments & notes.
- **Participant Fun Facts** – participant introductions & relationship building.
- **Breakout groups** – facilitated discussions.

Emerging Themes from the EEB Retreat

Machine learning, including “artificial intelligence”, can help advance microbiology.

- Machine learning models could exist for molecular biology, microbial evolution, and more.

Work to expand the environments/biomes represented in EEB.

- Microbial ecology studies are unequally distributed, especially geographically, and often not representative of our EEB community.
- International studies are poorly funded, and limit access to technologies, training, and collaboration.

Civic engagement and advocating for the importance of microbial EEB.

- There is a lack of science literacy in the general population.
- Social-cultural and political climate has divided support for the EEB scientific community.
- EEB supports ASM’s continued engagement with social issues such as climate change science, pandemics, etc.

The state of interdisciplinary research studies

- EEB can bridge across the other scientific communities.
- Interdisciplinary research is far more common today than in previous years.
- Advances in computer science/bioinformatics, as well as analytical technologies, have bolstered this trend.

Advancing our understanding of polymicrobial (multi-species) interactions

- There is a growing awareness that polymicrobial interactions play a critical role in community stability (ecology), community function (physiology and biogeochemistry), and microbial evolution.
- The EEB community is more engaged in working with cultivated multiple organisms as well as uncultivated natural communities.

Microbes and health in the Anthropocene

- The EEB community recognizes that we should better understand the relationship between polymicrobial communities (i.e., natural assemblages of microbes) and the human ecosystem (areas such as the built environment where humans are found in high densities).

Council on Microbial Sciences (COMS)

Host-Microbe Biology (HMB) Community Retreat

Vision and Purpose

HMB is an expansive field that encompasses diverse kinds of research and researchers. For the creative future of HMB, this retreat aimed to:

- Reflect on the current state of the HMB field.
- Identify opportunities for interdisciplinary research to push the HMB field forward.
- Determine who should be included from ASM Communities & beyond ASM.
- Define the resources that the HMB field need to further support scientific advancements.
- Develop cross-community platforms to promote more interactions.

“Who are the underutilized or underrecognized stakeholders needed to support the development of the HMB community?”



	Day 1 May 30 th	Day 2 May 31 st	Day 3 June 1 st
Topic	HMB Concepts and the Microbiota	Advancing Concepts of the Host in HMB	Systems Approaches to HMB
Keynote Speakers	Arturo Casadevall Johns Hopkins School of Medicine Gary Huffnagle University of Michigan	Margaret McFall - Ngai Carnegie Science Cheryl Nickerson Arizona State University	Sean Gibbons Institute for Systems Biology Dianne Newman California Institute of Technology



Alison Criss speaking at the ASM Studio about the HMB Retreat during Microbe 2023 in Houston, TX

Emerging Themes from the HMB Retreat

Broadening Concepts of Host and Microbe in HMB Research

- Determine capabilities and limitations of *in vitro*, *in vivo*, vs. *in silico*.
- Measure metabolic contributions and interactions of hosts and microbes both alive and dead.
- Consider environmental and physical factors.
- Integration of better models for both wet and dry labs.

Interdisciplinary HMB, with Microbiology as Foundational

- Collaborate with other fields & identify missing perspectives.
- Inclusion of scientists studying microbiology but who do not identify as a microbiologist.

Integration of 'Omics Data with Functional Measurements of Host-Microbe Interactions

- Improve functional measurements.
- Need tools that will not perturb native or experimentally established systems and at a variety of scales.
- Expand the known function of genetic sequences.

Equity and Accessibility in HMB

- Restrictive data accessibility and utility.
- Inequity in resources due to funding at the lab and institutional level.

Who Participated?

Total of 48 participants invited.

Institutions

- 7.5% US Government
- 7.5% Industry
- 11% International
- 28% Medical
- 46% Academic

Career stage

- 31.5% Early
- 33.5% Mid
- 35% Senior



Participation Interactions

- **ZOOM Chat feature** – used for written questions & comments.
- **Speak up/raise your digital hand** – real-time questions & comments.
- **Google doc** – asynchronous comments and notes.
- **Polls, word clouds** – participant engagement.
- **Breakout groups** – facilitated discussions.

Council on Microbial Sciences (COMS)

June all COMS meeting – Breakout Discussion Topics and Takeaways

Community Involvement and Advocating for Microbial Sciences

- Engage early career scientists in communication & public outreach at the grassroots level.
- Promote building connections and exposure to microbiologists in early education and beyond.
- Highlight the need for holistic involvement, including engaging parents to make science a part of the family.
- Address the loss of trust in science and the need for ASM to lead in rebuilding trust through outreach.
- Emphasize the importance of teaching scientists how to communicate effectively, both within the scientific and the public communities.

Best Practices for Big Data and New Technology

- Identify challenges with diverse data repositories, formats, and insufficient usage guides.
- Develop tools for integrating microbial genomic data with other data including health, environmental, and 'omics.
- Advocate for ASM to collaborate with existing initiatives and organizations for solving data-related issues.
- Highlight the role of journals in defining data standards.
- Explore the potential of ASM in providing educational resources related to big data and technology.

Effective Recruitment and Retention of Talent for Microbial Sciences

- Reframe the culture around microbiology to show the positive aspects.
- Emphasize the need for multiple mentorship opportunities.
- Promote inclusivity and diversity in microbiology.
- Address the challenge of talent retention, especially with an impending wave of retirements.
- Engage with other groups, such as tech groups, to promote interest in microbiology.
- Advocate for early education outreach and engage at different stages to attract young individuals to the field.

Interdisciplinary Research Teams

- Overcome scientific language barriers in interdisciplinary collaborations.
- Address the challenges related to bandwidth, indirect costs, and balancing interdisciplinary work with career advancement.
- Emphasize the importance of interdisciplinary science as a mindset.
- Engage with interdisciplinary groups over the long-term for continual and consistent scientific insight.
- Build a platforms or apps for matching researchers interested in interdisciplinary collaborations.

Community Meetups - Scientific Highlights

Each COMS Community held a meetup in the Track Hubs with 20+ participants each. Meetups varied based on needs of the community with some focused on networking and others on documenting the recommendations.



AES Community Meetup

CIV, HMB, & MBP

- Focused on networking.
- Building community engagement.
- Understanding the role of COMS.

EEB

- Increase networking opportunities.
- Reinforcing relations with other scientific & international societies.
- Microbial ecology in natural ecosystems.
- Interdisciplinary incentives.

AES

- Visibility & community building.
- Effective research management implementation.
- Effects of climate change on microbes and disease progression.
- Further cannabis & tobacco microbial testing.
- Metal resistance in microbes, mechanisms, & application in respect to bioremediation.

CPHM

- Support testing reimbursements.
- Engagement and advocacy at earlier education levels.
- Best practices for industry partner collaborations.
- Additional routes of certification & more dynamic career path.

POM

- Workforce development & outreach.
- Promoting POM's impact on all members.
- Diversity in speakers & career pathways.
- Early career development.
- Evidence-based pedagogical approaches.
- Workshops for trainees.

AAR

- Inclusion of basic science & genetics.
- Promote collaborations between scientists from differing fields.
- Open communication throughout team-research.
- Networking & community building.
- Support One-Health by bringing animal & environmental scientists into a rigorous scientific space.